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EXAMINER

FERGUSON, MICHAEL P

ART UNIT PAPER NUMBER

3679

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/961,391

Applicant(s)

CARSTENSEN, KENNETH J.

Examiner

Michael P. Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,9-14 and 20-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,15,16,18 and 28-30 is/are rejected.
- 7) ☒ Claim(s) 8,17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 1, 2, 5, 6, 9, 10, 13, 15 and 28-30 is withdrawn in view of the newly discovered reference(s) to Blose (US 3,572,777).

Rejections based on the newly cited reference(s) follow.

Election/Restrictions

2. Applicant's election without traverse of Group I Species 1, Figures 1, 3 and 4, claims 1, 2, 5-8, 15-19 and 28-30, in the reply filed on September 5, 2002 is acknowledged.

3. Claims 3, 4, 9-14 and 20-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on September 5, 2002.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 5-7, 15, 16, 18 and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Blose (US 3,572,777).

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As to claim 1, Blose discloses a connection for sucker rods (column 2 lines 5-12) used in strings in petroleum wells to pump petroleum along production tubing from a down hole pump, comprising:

a pair of sucker rods **10**, each having a pin end **16** with a flat transverse end face and an adjacent male threaded section;

a coupler **11** of known length between opposite end faces **15** and having two interior female threaded sections receiving the male threaded sections of the pin ends, wherein the pin ends of the sucker rods include coupler end engagement members **14** spaced apart from the end faces of the sucker rods and engageable against the coupler end faces; and

the pin ends of the sucker rods are dimensioned in length relative to the coupler length to provide prestressing compressional loading forces (via torque washer **17**) between opposing end faces of the pin ends when the male threaded sections are matingly threaded to preselected penetrations in the coupler past engagement of the coupler end engagement members with the coupler ends (Figure 2).

As to claim 2, Blose discloses a connection wherein the preselected penetration for each pin end **16** is to a chosen displacement beyond insertion of the coupler end engagement members **14** to the hand tight plane, whereby lengths of the pin end sections from the end faces **15** are prestressed in compression and coextensive lengths of the coupler are prestressed in tension and the mating threads lock under prestress to inhibit relative movement (Figure 2).

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As to claim 5, Blose discloses a connection including a torque washer **17** of a selected axial dimension with flat transverse sides **17c** and disposed centrally in the coupler **11** between the pin end faces and engaged on each side by the flat end faces of the pin ends **16**, and wherein the length dimensions of the pin ends relative to the coupler length are selected to account for the presence of the torque washer therebetween to provide prestressing compressional loading forces on the pin ends (Figure 2).

As to claim 6, Blose discloses a connection wherein the torque washer **17** is of different material (column 3 lines 19-22) than the pin ends **16** to prevent galling and has flat end faces, the pin end faces and washer end faces each include peripheral chamfers (between flange **17b** and shoulder **17c**; Figure 3).

The applicant is reminded that patentability determination of product-by-process claims is based on the product itself, even though such claims are limited and defined by the process. See MPEP § 2113. "The patentability of a product does not depend on its method of production." In re Thorpe, 777 F.2d 695,698,USPQ 964,966 (Fed.Cir.1985).

As to claim 7, Blose discloses a connection wherein the pin end faces are flat end finished to ± 0.0005 inch flatness and to a selected axial dimension with less than ± 0.0005 inch tolerance from the selected dimension (Figure 2).

As to claim 15, Blose discloses a fatigue-resistant combination for interconnection of sucker rods (column 2 lines 5-11) into a sucker rod string for use in

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pumping petroleum to the surface from a downhole location, by joining each pair of opposing pin ends with a separate coupler, comprising:

a cylindrical coupler **11** having an interior axial bore and a central region with female threaded sections on each axial side of the central region;

a torque element **17** of a selected axial length disposed in the central region of the coupler and having transverse end faces **17c**;

a pair of pin ends **16** of sucker rods **10** engaged in the axial bore of the coupler from opposite ends thereof; the pin ends having flat end faces and adjacent male thread sections that are each matingly engaged into a female threaded section of the coupler, and including shoulders **14** adjacent the male thread sections and spaced from the end faces of the pin ends engaging the opposite end faces of the torque element to prestress at least portions of the male thread sections of the pin ends in compression and associated portions of the coupler in tension when the pin ends are engaged in threaded into the coupler to a selected displacement of the shoulders against the coupler ends past the hand tight plane at which the shoulders first engage the coupler ends (Figure 2).

As to claim 16, Blose discloses a combination wherein the male and female threads meet predetermined standards for disparity in thread heights, and wherein the prestress conditions lock the differently threaded elements together to inhibit relative displacement and fatigue failure under repeated cycling and bending stresses (Figure 2).

As to claim 18, Blose discloses a connection for sucker rods (column 2 lines 5-11) used in pumping in oil well installations, comprising:

a sleeve **11** coupling with an interior female threaded surface and dimensioned in accordance with interconnectability and performance specifications and having end walls **15** of given radial dimension;

a pair of sucker rod **10** pin ends **16**, each threaded into the coupling from a different end, each of the pin ends having a male threaded end portion with an end face transverse to the longitudinal axis of the rod that deviates less than about 0.0005 inches from an end face plane, a transverse shoulder **14** spaced from the end face plane by a pre-stress dimension, and an undercut pin neck between the root thread of the male thread and the transverse shoulder, and

a torque disk **17** having parallel planar faces **17c** spaced apart by a predetermined axial distance the faces deviating from a plane by less than about 0.0005 inches and the torque disk being of different material (column 3 lines 19-22) than the pin ends,

where the spacings between the pin ends and the shoulders, and the axial distance between torque disk faces are selected such that with thread makeup to an operative tightness the end regions of the coupling are in compression coextensive with the pin neck regions and the coupling is in tension coextensive with the torque disk, and pressure and frictional contact are maintained between the pin ends and torque disk and the end walls of the coupling and the pin shoulders (Figure 2).

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As to claim 28, Blose discloses a connection for sucker rods (column 2 lines 5-11) used in pumping installations in oil wells, comprising:

a sleeve coupling **11** with interior counter bores at each end region and with an interior and female threaded surface between the counter bores and dimensioned in accordance with specifications which establish that a string of sucker rods **10** can be interconnected to provide predictable performance, and having end walls **15** of given radial dimension and axial dimension within tolerances of ± 0.0005 in. in relation to nominal dimensions within the selected specifications;

a pair of sucker rod pin ends **16** meeting the interconnectability standards, each threaded into the coupling from a different end, each of the pin ends having a male threaded end portion with an end face transverse to the longitudinal axis of the rod that deviates less than about 0.0005 in. from a nominal end face plane, a transverse shoulder **14** spaced from the end face plane by a pre-stress dimension, and an undercut pin neck between the root of the male thread and the transverse shoulder, and

a torque disk **17** having parallel planar faces **17c** spaced apart by a predetermined axial distance between the torque disk faces selected such that when the thread makeup is to an operative penetration in the coupling, the end regions in the coupling are in compression coextensive with the pin neck regions and the center region of the coupling is in tension coextensive with the torque disk, and compressive force and frictional contact are maintained between the pin ends and the end walls of the coupling and the shoulders (Figure 2).

As to claim 29, Blose discloses a sucker rod coupling unit (column 2 lines 5-11) comprising:

a sleeve coupling **11** and two sucker rod **10** pin ends **16** with predetermined dimensional criteria and the pin ends including pin neck areas and adjacent shoulders **14**, and the coupling unit further including a torque disk **17** between the pin ends, and being made up with torque or circumferential displacement methods to establish compressive contact forces between the pin end shoulders and coupling end areas and pin thread end areas and the torque disk, and tension force in the pin neck area and in the mid region of the sleeve coupling;

the induced forces imparting a pre-stress into the made up coupled unit at a degree calculated so as to be higher for each sucker rod size and material than any stresses induced by future operating loads (Figure 2).

As to claim 30, Blose discloses a coupling unit with dimensions such that when the coupling **11** is made up with either a torque or circumferential displacement method it establishes a pre-stress level in the unit that eliminates detrimental relative movement between the three combined parts approaching or at the microstructure level of the materials used in the parts (Figure 2).

Allowable Subject Matter

6. Claims 8, 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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7. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 8, Blose discloses a claimed connection with the exception of wherein the connection includes anaerobic adhesive between the matingly engaged threaded regions.

As to claim 17, Blose discloses the claimed combination with the exception of wherein anaerobic adhesive is disposed between the matingly engaging male and female threads.

As to claim 19, Blose discloses the claimed connection with the exception of wherein the connection includes anaerobic adhesive sealing and joining at least the threaded regions, and wherein the coupler length, for a 5/8 inch to 1 1/8 inch coupling, is 4.000 inches ± 0.0005 inch and the pin end dimension for a 5/8 inch to 1 1/8 inch coupling is accurate to ± 0.0005 inches, and the torque washer length is accurate to ± 0.0005 inch and includes an edge chamfer at each end, and wherein the thread pitch diameter varies with sucker rod size and, for a 7/8 inch rod is 1.121 inches ± 0.20 inches.

There is no teaching or suggestion, absent the applicant's own disclosure, for one having ordinary skill in the art at the time the invention was made to have modified a connection as disclosed by Blose to have the above mentioned elemental features.

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patents show the state of the art with respect to sucker rod connections:


Newski et al. (US 5,129,689), Greenfield (US 595,437), Lacy et al. (US 5,320,388) and Guy (US 4,852,655) are cited for pertaining to connections comprising a pair of sucker rods, a coupler and a torque washer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (571)272-7081. The examiner can normally be reached on M-F (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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GREGORY J. BINDAS
PRIMARY EXAMINER